THE SQUIRRELFISH *OSTICHTHYS HYPSIPTERYGION SUFENSIS* A NEW SUBSPECIES FROM THE RED SEA (HOLOCENTRIDAE; PISCES)

by

Daniel GOLANI (1)

ABSTRACT. A new subspecies of holocentrid fish from the Red Sea, *Ostichthys hypsipterygion sufensis*, is described. It differs from the other subspecies, *O. h. hypsipterygion* Randall, Shimizu and Yamakawa, 1982, from Japan, by the relative location of the vomerine and palatine tooth patches and a few meristic and measurement characters.

RESUME. *Ostichthys hypsipterygion sufensis*, ssp. nov. de la Mer Rouge est décrite. Cette nouvelle sous-espèce diffère de *O. h. hypsipterygion* Randall, Shimizu and Yamakawa, 1982, du Japon, par la position relative des plaques dentaires du vomer et des palatins ainsi que par divers autres caractères méristiques et métriques.

Mots-clés : *Ostichthys hypsipterygion sufensis*, Holocentridae, Mer Rougé, Red Sea, new subspecies.

The squirrelfish genus *Ostichthys* is characterized by a large head with rugose and ridged external bones, a prominent spine protruding posteriorly, from the upper operculum, usually XII dorsal spines, coarsely ctenoid scales and a broad V-shaped premaxillary groove. It was placed in the subfamily Myripristinae, which was distinguished from the other subfamily, Holocentrinae, by the structure of the auditory bulla and the swimbladder (Nelson, 1955), higher number of anal rays and lack of a very large preopercular spine in adults (Woods and Sonoda, 1973 ; Shimizu and Yamakawa, 1979).

The taxonomic status of the genera of the subfamily was, until recently, relatively confused and poorly understood. Ogilby (1908), McCulloch (1927), Whitley (1940) and Munro (1967) used *Ostichthys* as a generic name for *Myripristis*, while Postel (1962) and Tholasilingham *et al.* (1964), used *Myripristis* as a generic name for *Ostichthys.* Woods and Sonoda (1973) recognized only two species of *Ostichthys*. Later, Zehren (1979) acknowledged the existence of three species based on personal communication with Woods.

The taxonomic confusion has been clarified by the recent worldwide revision of the genus by Randall *et al.* (1982) ; in this work eight species were identified in the genus, of which four were first descriptions.

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(1) Department of Zoology, Hebrew University of Jerusalem, Jerusalem 91904, Israel.

On July 1, 1981, two specimens of an unidentified *Ostichthys* were collected with a commercial gill net at a depth of about 300 m off Nuweiba, Gulf of Aqaba, Red Sea (60 km south of Eilat). This collection was the result of experimental deep water fishing by local fishermen. A study of these two specimens revealed slight deviations from the closely related *Ostichthys hypsipterygion* Randall, Shimizu and Yamakawa, 1982, known only from Japan. Therefore it is proposed to recognize two subspecies in *O. hypsipterygion*, the Japanese *O. hypsipterygion hypsipterygion* and the new subspecies *O. hypsipterygion sufensis* from the Red Sea. The present description of *Ostichthys hypsipterygion sufensis* constitutes the first record of the genus in the Red Sea.

Materials and Methods

Measurements and counts followed the methodology of Randall *et al.* (1982). The most anterior point of the fish was measured slightly lateral to the center of the symphysis of the upper jaw. The most posterior point of the opercular membrane was used for the head measurement. Dorsal and anal spines were measured by determining a straight line from the base of the spine, as detected by X-ray photographs, to the tip. In the count of the caudal fin rays the number of upper procurrent caudal rays given first in Roman numerals, followed by the segmented and branched caudal ray in Arabic numerals, and the lower procurrent caudal rays in Roman numerals. Gill rakers were counted on the first arch on the left side. (The counting of rays was made easier by the use of X-ray photography).

The following abbreviations are used : BPBM, Bernice P. Bishop Museum, Honolulu; HUJF, Hebrew University of Jerusalem, Zoological Museum, Jerusalem.

Material examined : *Ostichthys hypsipterygion sufensis* : Holotype: HUJF 11286, 141.0 mm SL, 1 July 1981, 300 m, Nuweiba, Gulf of Aqaba, Red Sea, D. Golani; Paratype: HUJF 11287, 144,0 mm SL, all data as Holotype. *Ostichthys hypsipterygion hypsipterygion* : Paratype : BPBM 26362, 140.8 mm SL, female, 4 November 1975, Naha fish market, Okinawa, Japan, T. Yamakawa.

Ostichthys hypsipterygion sufensis, new subspecies (Fig. 1)

Diagnosis : 3 1/2 scales above lateral line to the midbase of dorsal fin; dorsal rays XII,13; anal rays IV,11; pectoral rays 15; caudal rays IV,21, III; pelvic rays I,7; lateral-line scales 28; median prepelvic scales 14; gill rakers 7 + 13; last two dorsal spines subequal; lower jaw not projecting; anterior end of palatine tooth patches reaching center of vomering tooth patch; least of caudal peduncle 8.3 - 8.5 in SL.

Description : Dorsal rays XII,13; anal rays IV,11; pectoral rays 15; pelvic rays I,7; caudal rays IV,21, III; lateral-line scales 28; scales above lateral line to midbase of dorsal fin 3 1/2 or 4; scales below lateral line 8 (the lowest, midventral); predorsal scales 6; median prepelvic scales 14; gill rakers 7 + 13 = 20; pseudobranchial

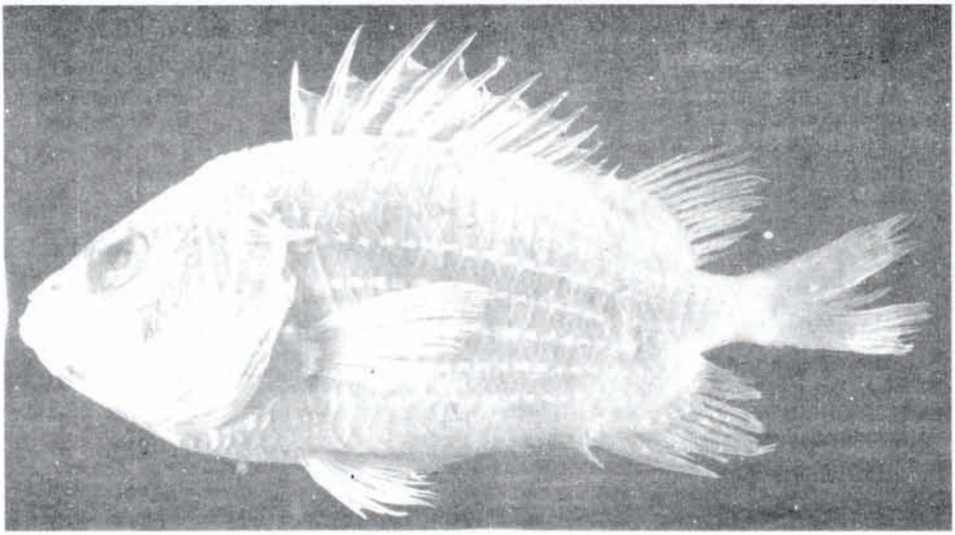

Fig. 1. – Holotype of *Ostichthys hypsipterygion sufensis*, HUJF 11286, 141.0 mm SL, Gulf of Aqaba, Red Sea.

filaments 22; filaments on first gill arch 64-65; branchiostegal rays 8; vertebrae 26.

Body depth 2.2, head 2.1-2.3 in SL; snout 4.7-5.5, orbit diameter 2.9-3.0, interorbital slightly convex, 6.1-6.4, least depth of caudal peduncle 4.6-4.8 all in head length.

Mouth large, the lower jaw not projecting, the maxilla extending almost to hind edge of orbit. Depth of posterior part of maxilla 4.1 in head. Teeth short, in the shape of sharp crystals; anterior teeth slightly larger, forming two round, knob-like enlargements at most anterior part of lower jaw which fit into gap at symphysis of upper jaw when mouth is closed. Vomerine tooth patch in a broad V-shape with rounded posterior corners. Rather wide bands of villiform teeth on palatines, the anterior end curving medially and reaching level of center of vomerine patch (Fig. 2A). Tongue large and thick.

Longest gill raker on lower limb next to raker at angle, 1.9 in orbit diameter; 64-65 gill filaments, shorter than longest gill raker.

External bones of head rugose, the ridges with many small spines. A stout spine on posterior part of operculum at height of upper 1/3 of eye. Spinous double margins of operculum extending from opercular spine to level of lower corner of preoperculum. A very small spine at corner of preoperculum. Depth of suborbital bone 3.8-4.2 in orbit.

Scales ctenoid. Five rows of small scales on cheek. A single vertical row of 8-9 scales at base of operculum (9 scales in holotype and 8 in paratype). Small scales on the bases of caudal and pectoral fins. Axil of pectoral fin without scales. Origin of dorsal fin slightly posterior to first lateral-line scale. Third dorsal spine longest, 1.8 in head. Last two dorsal spines subequal and smaller than the spine before them. Origin of anal fin below penultimate dorsal spine. Third anal spine large, 2.0-2.1 in head. Origin of pelvic and pectoral fins below first lateral-line scale.

Table I. – Proportional measurements (expressed as percentage of SL) of *O. hypsipterygion sufensis* from the Red Sea and *O. hypsipterygion hypsipterygion* (according to Randall *et al.* 1982).

	O. hypsipterygion sufensis		*O. hypsipterygion hypsipterygion*
	Holotype HUJF 11286	Paratye HUJF 11287	
Standard length (mm)	141.0	144.0	140.8 - 156.6
Depth of body	45.4	45.1	38.3 - 47.1
Head length	39.0	40.3	39.2 - 41.4
Snout length	7.8	8.3	7.1 - 8.7
Orbit diameter	13.5	13.2	13.4 - 14.9
Interorbital width	6.4	6.3	5.3 - 6.8
Upper jaw length	21.3	22.9	22.5 - 23.2
Least depth caudal peduncle	8.5	8.3	8.9 - 9.6
Length of caudal peduncle	8.5	9.7	8.3 - 9.6
Length of first dorsal spine	12.1	10.4	9.8 - 11.1
Length of longest dorsal spine	22.7	21.5	20.9 - 22.3
Length of longest dorsal ray	17.7	broken	19.2 - 19.3
Length of third anal spine	17.0	18.1	17.2 - 19.0
Length of longest anal ray	17.0	broken	18.3 - 18.5
Length of pectoral fin	23.4	23.6	25.0 - 27.1
Length of pelvic fin	19.1	18.7	20.7 - 23.8

Color (when fresh) : light red, each scale on body with a silvery white dash, thus forming longitudinal broken lines. Color in alcohol, yellowish with white dashes. (Table I).

Distribution : Gulf of Aqaba (Gulf of Eilat)

Ethymology : Named *sufensis* from the Hebrew name for the Red Sea, « Yam Suf » (literally, « Sea of Reeds »).

Discussion : *Ostichthys hypsipterygion* was described by Randall *et al.* (1982) from three specimens, all from Japan. The two Red Sea specimens resemble the Japanese fish in coloration and, like them, are distinguished from other species of the genus by the long dorsal spines. The two subspecies differ in palatine dentition. The palatine tooth patches of *O. hypsipterygion sufensis* are wide, and their anterior ends reach anteriorly to the level of the center of the vomerine tooth patch, while in

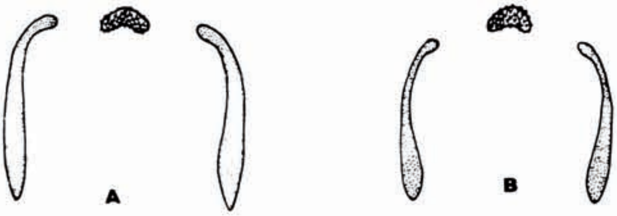

Fig. 2. – Schematic drawing of palatine and vomerine tooth patches of *O. hypsipterygion sufensis* (A) and *O. hypsipterygion hypsipterygion* (B).

O. hypsipterygion hypsipterygion (BPBM 26362) the palatine tooth patches are narrower, and they do not reach the vomerine patch (Fig. 2). The difference in the shape and the relative location of the vomerine and palatine tooth patches are particularly important. Randall and Guézé (1981) used the shape of the vomerine tooth patch as the principal basis for separating two species of the closely related genus *Myripristis*. In addition, there are some differences in counts and measurements : in *O. hypsipterygion sufensis* the least depth of the caudal peduncle is 8.3-8.5 in SL ; there are 14 prepelvic scales and 8-9 scales in the vertical row at the base of the opercle. The caudal peduncle of *O. hypsipterygion hypsipterygion* is not as deep, the least depth 8.9-9.6 in SL ; this subspecies has 12 prepelvic scales and 10 scales on the opercular base, as shown in Fig. 9, of Randall *et al.* (1982).

More material of both subspecies is needed for further study. Additional collecting areas between Japan and the Red Sea may determine if there are but two isolated populations of this *Ostichthys* or if there are intermediate populations.

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